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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,458	07/22/2004	Jas Pal Badyal	06275-408US1	3687

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MINNEAPOLIS, MN 55440-1022

EXAMINER
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ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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11/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/502,458

Applicant(s)

BADYAL ET AL.

Examiner

Ramsey Zacharia

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7 and 9-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7 and 9-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 01 November 2007 has been entered.

#### ***Claim Objections***

3. Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 permits the component of the drug delivery device to be a canister, stem, seal, valve, measuring chamber, or actuator. However, independent claim 9 requires the coating to be applied to the can.

***Claim Rejections - 35 USC § 103***

4. Claims 1, 4-7, and 9-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Britto (US 6,149,892) in view of Badyal et al. (WO 98/58117 A1).

Britto teaches a metered dose inhaler having part or all of its internal surfaces coated with a fluorocarbon polymer (abstract). A metered dose inhaler comprises a can, a stem, a drug metering valve (i.e. an actuator), and seals. The can may be made of a metal such as aluminum (column 3, lines 61-64). The fluorocarbon polymer coating has a thickness in the range of about 1  $\mu$ m to about 1 mm (column 4, lines 57-61). The fluorocarbon polymer coating may be applied using plasma polymerization at a temperature of as low as about 20 °C (column 6, lines 17-35). The inhaler may be used for dispensing beclomethasone dipropionate with a fluorocarbon (i.e. non-aqueous) propellant (column 5, lines 17-26). The application of the coating reduces or eliminates adhesion of the drug particles (column 1, lines 52-56).

Britto does not teach the use of a fluorocarbon polymer formed from the fluorinated acrylate compounds recited in independent claims 1, 9, and 14. However, Britto do teach the use of polymers formed from fluorinated monomers such as TFE, HFP, and VDF (see column 4, lines 22-38).

Badyal et al. teach a fluorinated coating designed to prevent or inhibit soiling that may be applied to solid surfaces, such as metal (page 1, lines 6-12). The degree of repellency is a function of the number and length of fluorocarbon groups (page 1, lines 19-23). The coating may be applied to biomedical devices (page 10, lines 9-14). The coating may be formed from a fluoroacrylates, such as 1H, 1H, 2H, 2H heptadecafluorodecyl acrylate (see Example 3).

It would be obvious to one skilled in the art to use the monomer of Badyal as the fluorinated monomer in the coating of Britto because the coating of Badyal et al. serves the same purpose as that of Britto (i.e. a coating for biomedical devices to prevent inhibit the adhesion of contaminants) and it is *prima facie* obvious to select a known material based on its suitability for its intended use. See MPEP 2144.07. Moreover, because the specific fluoroacrylate used by Badyal et al., 1H, 1H, 2H, 2H heptadecafluorodecyl acrylate, has a longer fluorinated chain than the specific monomers disclosed in Britto (e.g. TFE, HFP, VDF), one skilled in the art would be further motivated to use the monomer of Badyal et al. to improve the repellency since Badyal et al. teach that the degree of repellency is a function of the length of the fluorocarbon groups.

#### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

It is further noted that Badyal et al. disclose applying their coating to more than just fabrics and glass. Badyal et al. state that the substrate may be a solid surface (see page 10, lines 13-14) and, in addition to glass, metal, ceramics, paper, polymers, etc are also listed as solid surfaces to which it is desirable to apply oil and water repellent treatments (see page 1, lines 7-12).

Additionally, the data presented in Table 5 of Badyal et al. would not be expected to lead one skilled in the art away from employing the monomers of Badyal et al. in the plasma polymerization process of Britto. Since the plasma deposition process results in the *in situ* polymerization of monomers on the surface to be coated, one skilled in the art would expect all

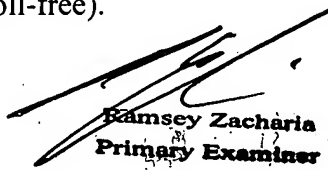
plasma deposition processes to result in coatings containing unreacted monomer and/or low molecular weight oligomers which would be susceptible to solvent extraction. As such, one skilled in the art would expect a plasma deposited coating formed from the monomers disclosed by Britto to also be susceptible to solvent extraction. Since Britto explicitly teach that his fluorocarbon polymer coating may be formed by a plasma deposition process, one skilled in the art would not question the safety of plasma deposited coatings but rather one would expect plasma deposited coating to function adequately even though they may be susceptible to solvent extraction.

### *Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached at (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramsey Zacharia  
Primary Examiner  
Tech Center 1700